A YANG Data Model for Optical Network Inventory

CCAMP WG, IETF112

draft-yg3bp-ccamp-optical-inventory-yang-00

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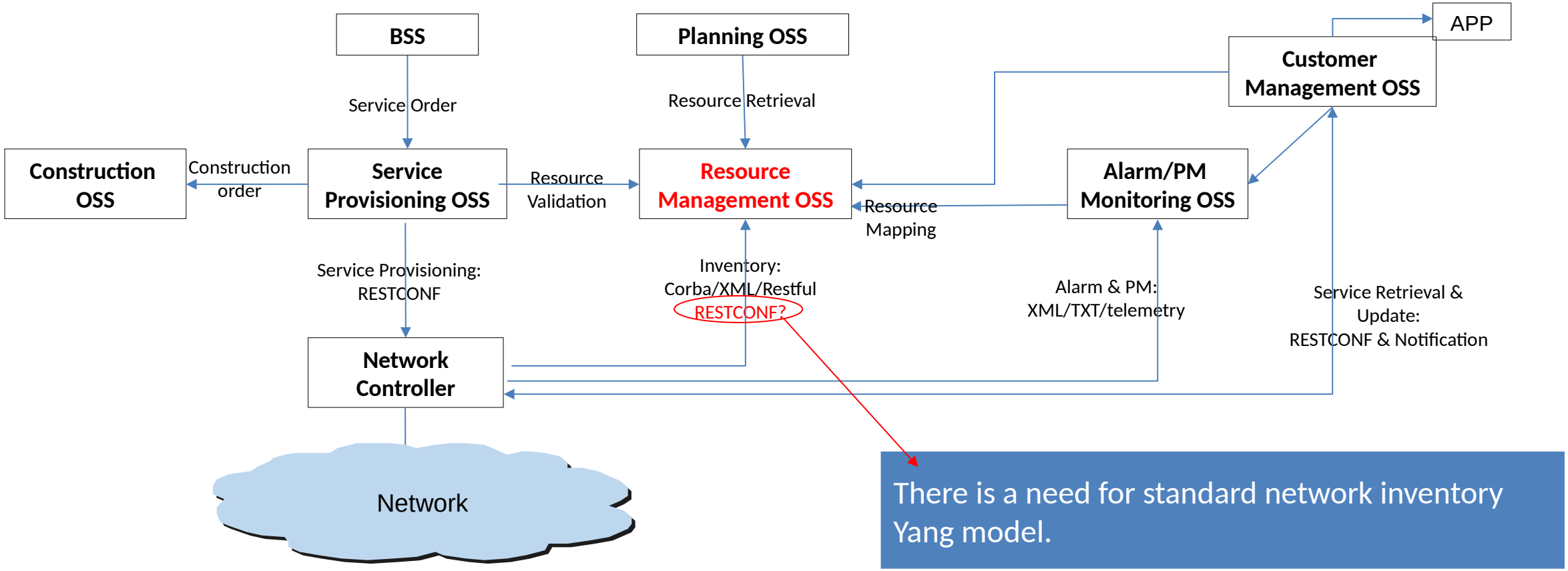
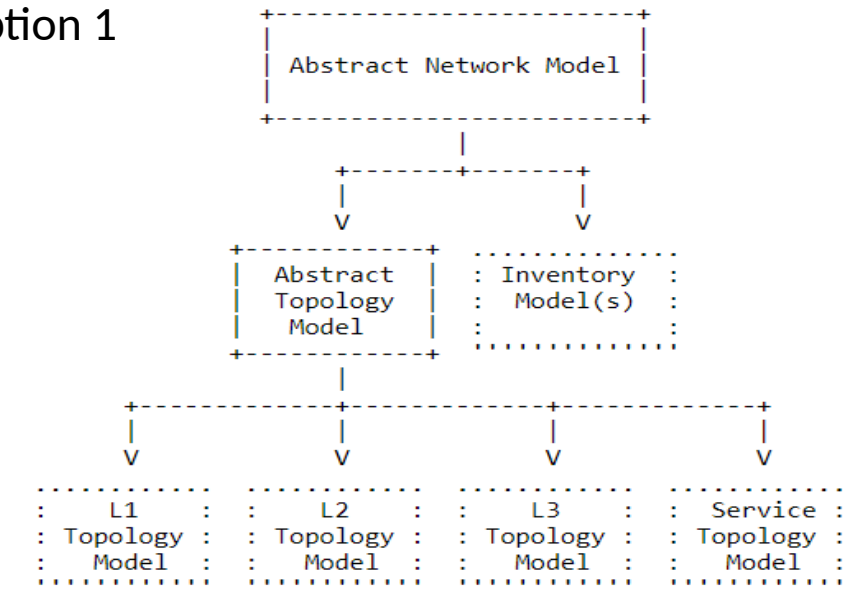
Why the model is needed?

- Motivations:
  - Inventory management is a key function in operators' resource management OSS system
  - Lacking standard Yang data model definition
  - Data model in RFC8348 is limited to a single server level, it covers full management of hardware
  - We intend to provide a generic and technology-agnostic data model, covering IP, optical and microwave



Model Relationship with RFC8345

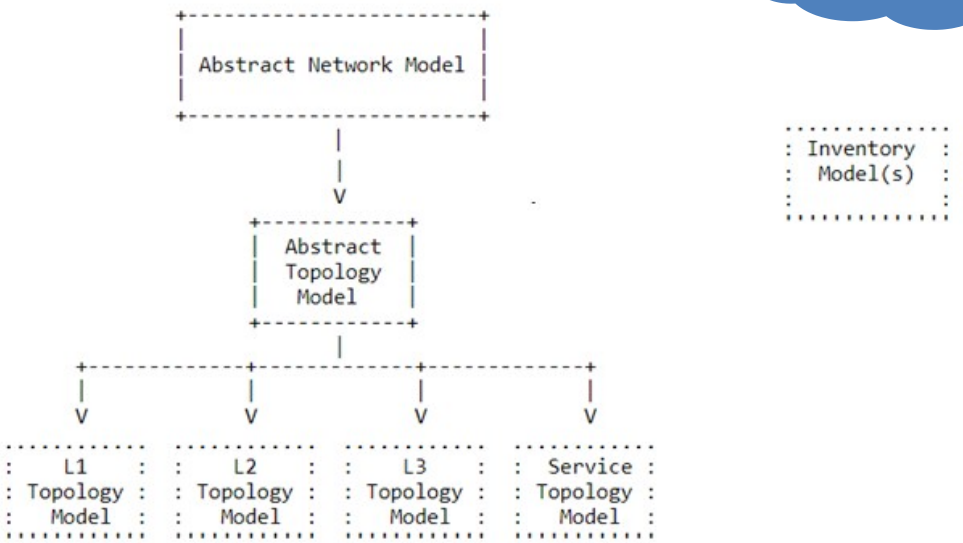
Option 1



- The network inventory model could be augmentation of abstract network model according to RFC8345.
- Some applications only require network inventory information
- Multiple retrieval steps to get only inventory data with filtering
- There exist a big cluster of topology data under ietf-network and make the filtering time-consuming in large scale network

Option 2

Suggested



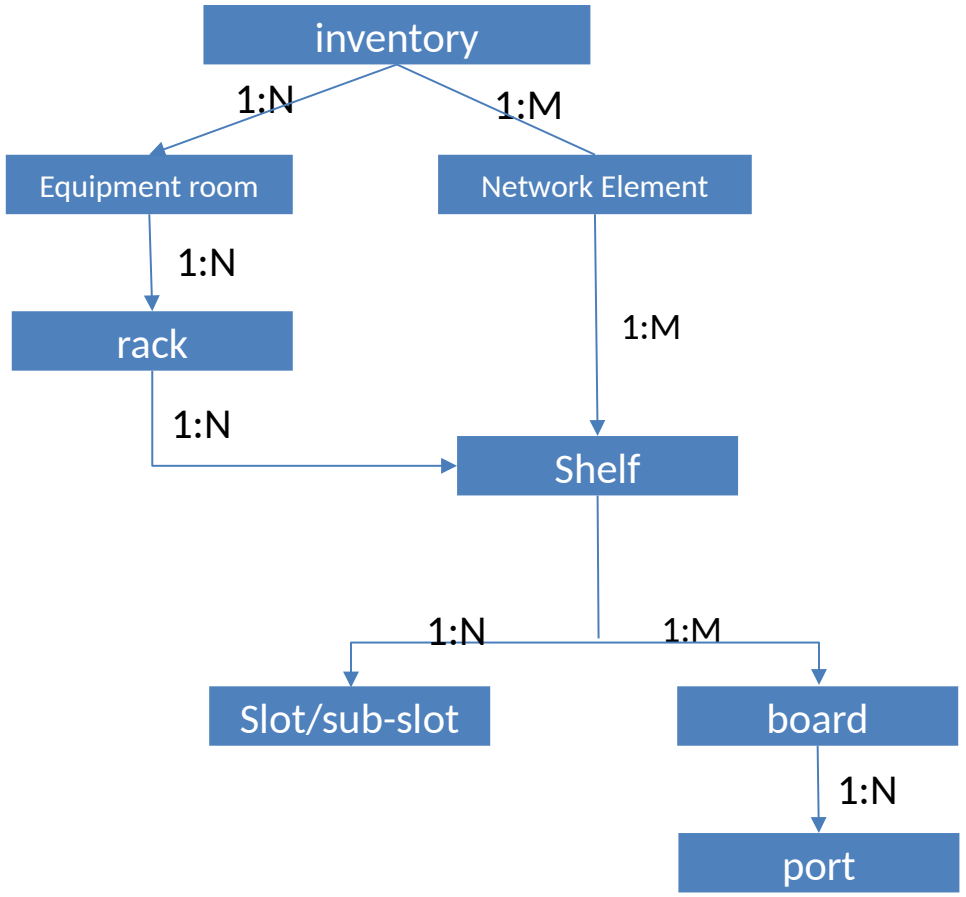
- The inventory model has a new root.
- Application can retrieve inventory data in single step without filtering

Reusing RFC8348

```
module: ietf-hardware
  +--rw hardware
     +--ro last-change?   yang:date-and-time
     +--rw component* [name]
        +--rw name               string
        +--rw class              identityref
        +--ro physical-index?    int32 {entity-mib}?
        +--ro description?       string
        +--rw parent?            -> ../../component/name
        +--rw parent-rel-pos?    int32
        +--ro contains-child*    -> ../../component/name
        +--ro hardware-rev?      string
        +--ro firmware-rev?      string
        +--ro software-rev?      string
        +--ro serial-num?        string
        +--ro mfg-name?          string
        +--ro model-name?        string
        +--rw alias?             string
        +--rw asset-id?          string
        +--ro is-fru?            boolean
        +--ro mfg-date?          yang:date-and-time
```

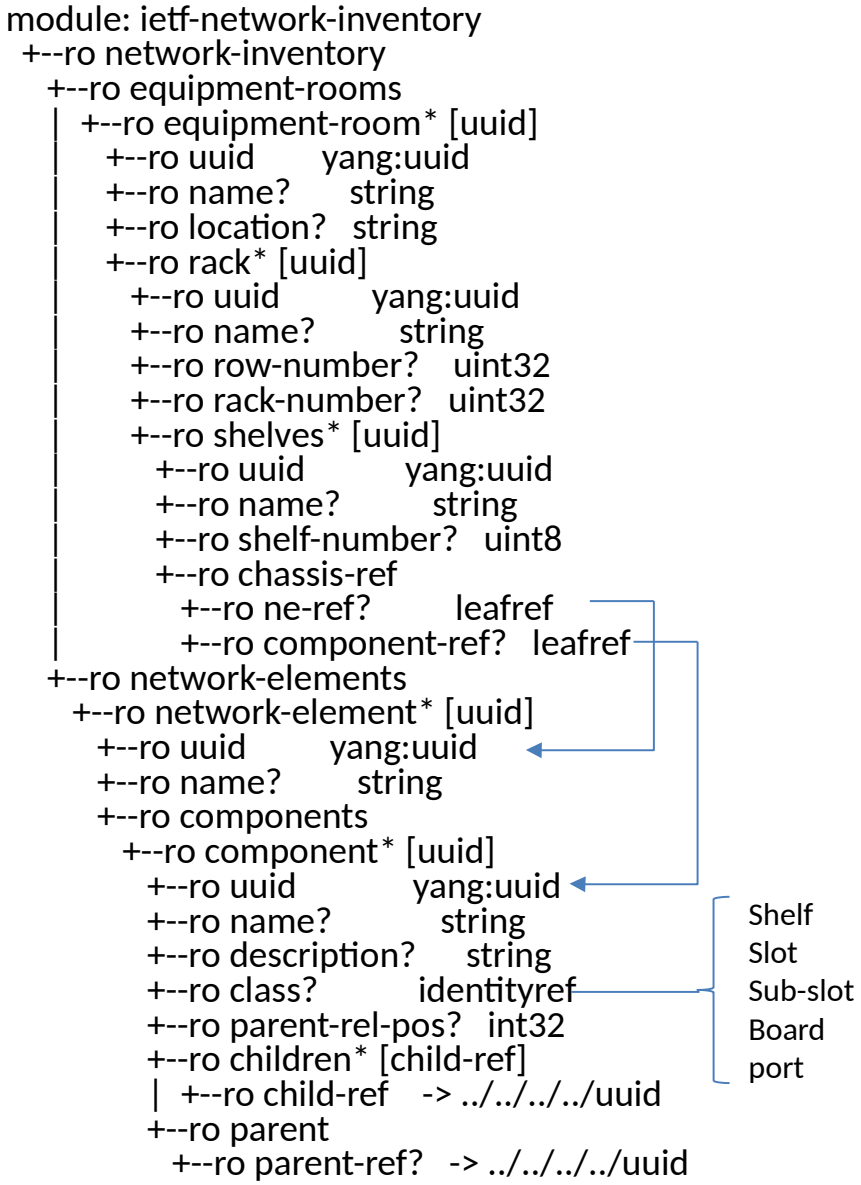
- The proposed inventory model can use similar structure and common attributes as defined in RFC8348
- The proposed inventory model will focus on management and will not repeat all the configuration data of RFC8348
- Option to use schema mount is under investigation

Inventory Objects and Their Relationship



- A rack can be deployed with several NEs and a NE can also be installed on different racks. So they are independent objects. Same situation is also happened between slot and board.

What parameters are in scope?



- We just define a simple network inventory model architecture in the first version of draft. The detail information for each inventory object will be discussed later.
- Most of the inventory objects are defined as components of network element according to the idea of RFC8348.
- To support the one NE installed on different racks scenario, the rack object is not define as a component of NE, but the shelves in it can be referred to shelf components in NE.

Status & Discussion

- This work defines the optical inventory model and received good support from ccamp experts, meanwhile it may be applicable to a wider scope, therefore we will also report the progress to other WGs, e.g. (netmod, opsawg)

- Should this model augments RFC8345 or defines a new root?

- Shall we consider schema mount?